to being shown in Figure 2, first output circuit 52 and second output circuit are described at, for example, paragraph 17, line 6 and again at paragraph 18, line 2, and paragraph 20, line 5. Applicants respectfully submit that one skilled in the art would understand a circuit function from a schematic diagram.

Applicants respectfully submit that the present specification describes the functions of "input circuits", "output circuits" and "microcontroller", and further provides exemplary part numbers, resistor ratings, and circuit connections in the figures. As such, Applicants respectfully submit that the claims are fully enabled and supported by the specification, and that the scope of the claims are ascertainable with a reasonable degree of certainty. Accordingly, Applicants respectfully submit that Claims 11-20 satisfy Section 112.

Accordingly, for at least the reasons set forth above, Applicants respectfully request that the Section 112 rejection of Claims 11-20 be withdrawn.

The rejection of Claims 1, 2, and 6 under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 3,671,728 (Day et al.) is respectfully traversed.

Day et al. describe an electronic servo system that includes a synchro transmitter 11 and a three wire to two wire converter 35, which receives three stator outputs from synchro transmitter 11 and converts the angular information from synchro transmitter 11 into sine and cosine signals related to the angular position of the rotor of the synchro transmitter 11. Day et al. do not describe nor suggest a three-wire to two-wire programming box that communicates bi-directionally.

Claim 1 recites a method for utilizing a three-wire programming box with a motor control circuit wherein the method includes "providing a three-wire to two-wire interface...connecting the three-wire to two-wire interface between the three-wire programming box and the motor control circuit such that the three-wire programming box communicates bi-directionally with the motor control circuit utilizing less than three connections between the three-wire to two-wire interface and the motor control circuit."

Day et al. do not describe nor suggest a method for utilizing a three-wire programming box with a motor control circuit wherein the method includes connecting the three-wire to two-wire interface between the three-wire programming box and the motor control circuit such that the three-wire programming box communicates bi-directionally with

the motor control circuit. Rather, Day et al. describe a three wire to two wire converter, which receives three stator outputs from a synchro transmitter and converts the angular information into sine and cosine signals Applicants respectfully submit that converting a received output into a output signal is not bi-directional communication, and as such, Day et al. do not describe nor suggest a three-wire programming box that communicates bi-directionally. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Day et al.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 2 likewise is patentable over Day et al.

Claim 6 recites an interface circuit for interfacing with a motor control circuit including a first input circuit wherein the interface circuit includes "a three-wire to two-wire interface comprising a second input circuit electrically equivalent to the first input circuit of the motor control circuit."

Day et al. do not describe nor suggest an interface circuit for interfacing with a motor control circuit that includes a first input circuit wherein the interface circuit includes a three-wire to two-wire interface that includes a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Specifically, Day et al. do not describe nor suggest a first input circuit wherein the interface circuit includes a three-wire to two-wire interface, nor do Day et al. describe or suggest a three-wire to two-wire interface that includes a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Rather, Day et al. describe an output circuit that includes a three wire to two wire converter, which receives three stator outputs from a synchro transmitter. Further, Day et al. do not describe nor suggest a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Day et al.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 2, and 6 be withdrawn.

The rejection of Claims 1, 2, and 6 under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 3,705,344 (Espen) is respectfully traversed.

Espen describes an electronic circuit 10, 11 for converting three-wire synchro-type amplitude modulated carrier frequency signals to an equivalent two-wire constant amplitude variable phase signal e_o. The circuit includes a constant amplitude variable phase circuit 10 and a frequency compensation circuit 11. Constant amplitude variable phase circuit 10 includes a synchro transmitter 12, s1, s2, s3 and an operational amplifier 13. Frequency compensation circuit 11 includes a divider 14, two AC-DC converters 16, 18, a variable resistor R_o and a comparator 17. Resistance of R_o is varied depending on a synchro transmitter carrier frequency to maintain a constant amplitude variable phase relationship. Espen does not describe nor suggest a three-wire to two-wire programming box that communicates bi-directionally.

Claim 1 recites a method for utilizing a three-wire programming box with a motor control circuit wherein the method includes "providing a three-wire to two-wire interface...connecting the three-wire to two-wire interface between the three-wire programming box and the motor control circuit such that the three-wire programming box communicates bi-directionally with the motor control circuit utilizing less than three connections between the three-wire to two-wire interface and the motor control circuit."

Espen does not describe nor suggest a method for utilizing a three-wire programming box with a motor control circuit wherein the method includes connecting the three-wire to two-wire interface between the three-wire programming box and the motor control circuit such that the three-wire programming box communicates bi-directionally with the motor control circuit. Rather, Espen describes a frequency compensation circuit for a constant amplitude variable phase circuit using a variable resistor to alter the capacitive reactance of a converter input. Espen does not describe nor suggest a three-wire programming box that communicates bi-directionally. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Espen.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 2 likewise is patentable over Espen.

Claim 6 recites an interface circuit for interfacing with a motor control circuit including a first input circuit wherein the interface circuit includes "a three-wire to two-wire

interface comprising a second input circuit electrically equivalent to the first input circuit of the motor control circuit."

Espen does not describe nor suggest an interface circuit for interfacing with a motor control circuit that includes a first input circuit wherein the interface circuit includes a three-wire to two-wire interface that includes a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Specifically, Espen does not describe nor suggest a first input circuit wherein the interface circuit includes a three-wire to two-wire interface, nor does Espen describe or suggest a three-wire to two-wire interface that includes a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Rather, Espen describes a frequency compensation circuit that receives one input through a divider and an AC-DC converter, receives another input directly into a second AC-DC converter, the outputs of the AC-DC converters are combined in a comparator. The output of the comparator is applied to the gate of a JFET in a variable resistance circuit. Further, Espen does not describe nor suggest a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Espen

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 2, and 6 be withdrawn.

The rejection of Claims 1, 2, and 6 under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 3,493,737 (Edelson) is respectfully traversed.

Edelson describes an angle resolution system that includes an angle position sensor 11, a synchro transmitter 15, control transformer 25, a pair of demodulators 37, 39 and a reference signal source 41. Angular changes of the position of sensor 11 are transmitted to the stator of control transformer 25 via the stator windings of synchro transmitter 15. The output of synchro transmitter sine windings 33 and cosine windings 35 are applied to phase sensitive demodulators 37 and 39 respectively. The outputs of demodulators 37 and 39 are applied to input terminals 43 and 45, respectively, of function stabilizer 47, which compensates for amplitude variations of the sine and cosine signals due to changes in the reference voltage or the effects of load variations. Edelson does not describe nor suggest a three-wire to two-wire programming box that communicates bi-directionally.

Claim 1 recites a method for utilizing a three-wire programming box with a motor control circuit wherein the method includes "providing a three-wire to two-wire interface...connecting the three-wire to two-wire interface between the three-wire programming box and the motor control circuit such that the three-wire programming box communicates bi-directionally with the motor control circuit utilizing less than three connections between the three-wire to two-wire interface and the motor control circuit."

Edelson does not describe nor suggest a method for utilizing a three-wire programming box with a motor control circuit wherein the method includes connecting the three-wire to two-wire interface between the three-wire programming box and the motor control circuit such that the three-wire programming box communicates bi-directionally with the motor control circuit. Rather, Edelson describes a function stabilizer circuit that cancels out the effects of voltage changes on sine and cosine information signals such that the signals are independent of reference and/or system voltage changes. Edelson does not describe nor suggest a three-wire programming box that communicates bi-directionally. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Edelson.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 2 likewise is patentable over Edelson.

Claim 6 recites an interface circuit for interfacing with a motor control circuit including a first input circuit wherein the interface circuit includes "a three-wire to two-wire interface comprising a second input circuit electrically equivalent to the first input circuit of the motor control circuit."

Edelson does not describe nor suggest an interface circuit for interfacing with a motor control circuit that includes a first input circuit wherein the interface circuit includes a three-wire to two-wire interface that includes a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Specifically, Edelson does not describe nor suggest a first input circuit wherein the interface circuit includes a three-wire to two-wire interface, nor does Edelson describe or suggest a three-wire to two-wire interface that includes a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Rather, Edelson describes a function stabilizer circuit that cancels out the effects of voltage changes on sine and cosine information signals such that the signals are

independent of reference and/or system voltage changes. Further, Edelson does not describe nor suggest a second input circuit electrically equivalent to the first input circuit of the motor control circuit. Accordingly, for at least the reasons set forth above, Claim 6 is submitted to be patentable over Edelson.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 2, and 6 be withdrawn.

Claims 3-5 were objected to as being dependent upon a rejected base claim, but were indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 3-5 depend, directly or indirectly, from independent Claim 1 which is submitted to be in condition for allowance. When the recitations of Claims 3-5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 3-5 are also in condition for allowance.

Claims 7-10 were objected to as being dependent upon a rejected base claim, but were indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 7-10 depend, directly or indirectly, from independent Claim 6 which is submitted to be in condition for allowance. When the recitations of Claims 7-10 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7-10 are also in condition for allowance.

For at least the reasons set forth above, Applicants respectfully request that the objection to Claims 3-5, 7-10 be withdrawn.

Claims 11-20 were indicated as being allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, second paragraph, set forth in the office action. Claims 12-15 depend from Claim 11 which is submitted to be in condition for allowance. When the recitations of Claims 12-15 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 12-15 likewise are in condition for allowance. Claim 17 depends from Claim 16 which is submitted to be in condition for allowance. When the recitations of Claim 17 are considered in combination with the recitations of Claim 16, Applicants submit that dependent Claim 17 likewise is in condition for allowance. Claims 19-20 depend from Claim 18 which is submitted to be in condition for allowance. When the

recitations of Claims 19-20 are considered in combination with the recitations of Claim 18, Applicants submit that dependent Claims 19-20 likewise are in condition for allowance.

In view of the foregoing remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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